



April 15, 2020

Ms. Marie J. McDonald
U.S. Environmental Protection Agency
Water Enforcement, OES4-SMR
5 Post Office Square
Boston, MA 02109-3912

Subject: Hull, MA Water Pollution Control Facility (WPCF) – NPDES Permit No. MA0101231
Discharge Monitoring Reports – March 2020 – Discharge 001-A

Dear Ms. McDonald:

Enclosed please find the completed DMR for the month of March 2020. Please note that the facility's effluent was in compliance with NPDES requirements, with the exception of one daily excursion for effluent enterococci, that occurred on March 23, 2020.

Max Daily Permit limit:	276 CFU/100mL
Result:	390 CFU/100mL

It is unclear why the high result was seen, as the chlorine residual at the time of sample collection was above the daily target, and there had been no earlier indications of any issues. A review of plant flow, sodium hypochlorite dosage, sample collection, and lab QA/QC was performed, with nothing found. The fecal coliform sample result for the sample collected at the same time was very low, 10 CFU/100mL. The following week's sample collected on 3/31/20 indicated full compliance. A copy of the email notification sent out on 3/26/20 is included with this submittal.

As a result of the Covid-19 health emergency, the Hull facility has been operating with a modified staffing schedule to encourage social separation and minimize staff interactions while promoting a safe working environment to protect their health. David Burns of the MADEP was informed of the staffing changes on 3/20/20. There have not been any issues to date, and the facility has been attending the weekly MassDEP Wastewater COVID-19 calls for updates and any changes.

Should you have questions concerning this submittal, please contact the undersigned at 781-925-0906. Thank you for your assistance.

Sincerely,

Aram Varjabedian – Woodard & Curran
Project Manager

Enc. DMR forms, support documentation

Cc: David Burns, MA DEP (SERO) Lakeville, MA
John J. Struzziery - Director of Wastewater Operations/Assistant Director of Public Works
Ryan Joyce – Division of Marine Fisheries

Aram Varjabedian

From: Aram Varjabedian
Sent: Saturday, March 28, 2020 7:28 AM
To: Turin, David (Turin.David@epa.gov); david.burns (david.burns@state.ma.us); 'Joyce, Ryan (FWE)'
Cc: jstruzziery (jstruzziery@town.hull.ma.us); Robert Scott (rscott@woodardcurran.com); Bill Boornazian; bkiely
Subject: RE: Hull, MA WPCF - MA0101231 - Permit exceedence - Enterococci

Good morning:

I have a correction to the previously sent email. Ryan Joyce had inquired, and I appreciate the feedback and pointing out my error. I had incorrectly indicated the max daily limit for fecal coliform in the initial notification.

ENTEROCOCCI BACTERIA ⁶	***** *****	***** *****	35 CFU/100 ml	***** *****	276 CFU/100 ml
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To clarify: The permit exceedance was for enterococci.

Max daily enterococci limit – 276 CFU/100ml

Result for 3/23/20 – 390 CFU/100ml

I apologize for any confusion that I may have caused.

Sincerely,

Aram

Aram Varjabedian - Plant Manager
Hull Wastewater Treatment Facility
1111 Nantasket Avenue
Hull, MA 02045
Phone 781.925.0906, Fax 781.925.3056, Cell 339.214.8334
www.woodardcurran.com



COMMITMENT & INTEGRITY DRIVE RESULTS

From: Aram Varjabedian
Sent: Thursday, March 26, 2020 12:43 PM
To: Turin, David (Turin.David@epa.gov) <turin.david@epa.gov>; david.burns (david.burns@state.ma.us) <david.burns@state.ma.us>; Joyce, Ryan (FWE) <ryan.joyce@state.ma.us>
Cc: jstruzziery (jstruzziery@town.hull.ma.us) <jstruzziery@town.hull.ma.us>; Robert Scott (rscott@woodardcurran.com) <rscott@woodardcurran.com>; Bill Boornazian <wboornazian@woodardcurran.com>; bkiely <bkiely@town.hull.ma.us>
Subject: Hull, MA WPCF - MA0101231 - Permit exceedence - Enterococci

Good afternoon:

I wanted to inform you that we had a maximum daily exceedance for an effluent enterococci sample that was collected on Monday 3/23/20 at 10:00AM. We were informed of the results from our contract lab G&L Labs.

Max daily ~~fecal~~ coliform limit – 276 CFU/100ml

ENTEROCOCCI 3-27-20

Result for 3/23/20 – 390 CFU/100ml

The sampling for fecal coliform and enterococci is done at the same time. A separate sample for fecal coliform and enterococci is collected in a sterile 120mL specimen container from the chlorine contact chamber channel. The sampling procedure and location are the same with no recent changes. The chlorine residual at the time of sample was higher than typically seen and had been at this level. The chlorine residual at the time of sampling was 1.9 mg/L and was well above our typical target of 1.0-1.2 mg/L for the flow rates observed and the observed residual was at that level for the previous 4-5 hours.

I have reached out to the contract lab to obtain additional information, to see if all of their QA/QC requirements were met, and if there may have been a reason why the fecal coliform result of 10 CFU/100mL was extremely low, but the enterococci result was very high. Their return reply indicated that all QA/QC was met with the various dilutions, and with the same technician performing the analysis. The lab also indicated that the fecal coliform bacteria may die off more quickly than the enterococci, but the samples were analyzed well within the maximum allowable hold time. It is possible that something unforeseen was picked up during the sampling for enterococci, or something occurred in transport or at the lab. This is unknown. As a result of the Covid-19 crisis, the contract lab hours have been reduced significantly, and only has one day available per week to deliver samples and for the lab to run the samples.

The effluent pumps pump from the effluent wet well up to the CCT's and the pumping rate is based upon flows into the plant and the wet well level. It is possible that something microscopic may have become dislodged due to the variable flows prior to the sampling time, as the effluent pump had cycled on and off several times, due to lower flows. All of the earlier samples collected for the month of March for both fecal coliform and enterococci had results of <10 CFU/100ml, and these samples were collected at a similar time.

Our disinfection process is operating well, and flows during the sampling period were approximately 1.0 MG. Sodium hypochlorite is currently being added into the effluent wet well before the effluent is pumped up to the chlorine contact tanks [CCT]. Both CCT's are currently on line. I will provide an update, should any additional information become available from the contract lab.

Should you have any questions or need additional information, please let me know.

Sincerely,

Aram

Aram Varjabedian - Plant Manager
Hull Wastewater Treatment Facility
1111 Nantasket Avenue
Hull, MA 02045
Phone 781.925.0906, Fax 781.925.3056, Cell 339.214.8334
www.woodardcurran.com



COMMITMENT & INTEGRITY DRIVE RESULTS



HULL, MA WATER POLLUTION CONTROL FACILITY
NPDES NO. MA0101231

Hull Water Pollution Control Facility – Staffing – March 2020
See attached modified Covid-19 Plan

Project Manager/Chief Operator – Aram Varjabedian	MA Grade 7C
Asst. Project Manager/Asst. Chief Operator – William Boornazian	MA Grade 7C
Lead Operator – Joseph Basler	MA Grade 5C
Operations/Maintenance Tech 2 – Eric Sutton	MA Grade 3M
Operations/Maintenance Tech 2 – David Wilson	MA Grade 4M
Operations/Maintenance Tech 1 – Ryan Holman	MA Grade 4M
Supplemental O&M Personnel supporting/assisting the Hull facility	
Roger Boltrushek – Part-time Operator	MA Grade 7C
Jody St. George - Sr. Operations Specialist	MA Grade 7C
Richard Gould – Part-time Operator	MA Grade 5C
Robert Scott – Area Manager	MA Grade 6C



Hull Water Pollution Control Facility – Schedule – March 2020

Schedule for 8 Hour/Day coverage:

	License	Sun	Mon	Tue	Wed	Thur	Fri	Sat
Project Manager	7C	***	X	X	X	X	X	
Asst. Project Manager	7C	***	X	X	X	X	X	
Lead Operator	5C			X	X	X	X	X
O&M Tech 1				X	X	X	X	X
O&M Tech 2	3M		X	X	X	X	X	
O&M Tech 2	4M	X	X	X	X	X		
Part-Time Operator	7C or 5C	*						*
Sr. O&M Specialist	7C	**						

- Part-time operator schedule is usually one day every two weeks and the day can vary, but usually on a Sunday and can vary week-to-week. An asterisk [*] denotes those days that the part-time operator could be scheduled.
- [**] Sr. O&M Specialists coverage is occasionally part of the Sunday rotation, and also if licensed operations coverage is needed during the week.
- [***] If Sunday coverage is by Sr. O&M, Lead Operator, or PT operator, then PM and APM schedule is Monday through Friday. PM and APM available and part of the Sunday coverage rotation as needed, and for Saturday coverage if needed.
- PM & APM schedule is Monday through Friday

HULL, MA WPCF REDUCED STAFFING PLAN - COVID-19

WEEK 1

Date	4/4/2020	4/5/2020	4/6/2020	4/7/2020	4/8/2020	4/9/2020	4/10/2020	Date	4/11/2020	4/12/2020	4/13/2020	4/14/2020	4/15/2020	4/16/2020	4/17/2020
Day	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Day	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Aram		X	X	X	X			Aram		X	X	X			
Dave		X	X	X	X			Dave		X	X	X			
Eric		X	X	X	X			Eric		X	X	X			
Bill	X					X	X	Bill	X				X	X	X
Joe	X					X	X	Joe	X				X	X	X
Ryan	X					X	X	Ryan	X				X	X	X

WEEK 2

WEEK 1

Date	4/18/2020	4/19/2020	4/20/2020	4/21/2020	4/22/2020	4/23/2020	4/24/2020	Date	4/25/2020	4/26/2020	4/27/2020	4/28/2020	4/29/2020	4/30/2020	5/1/2020
Day	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Day	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Aram		X	X	X	X			Aram		X	X	X			
Dave		X	X	X	X			Dave		X	X	X			
Eric		X	X	X	X			Eric		X	X	X			
Bill	X					X	X	Bill	X				X	X	X
Joe	X					X	X	Joe	X				X	X	X
Ryan	X					X	X	Ryan	X				X	X	X

WEEK 2

Notes staff works in teams of three

Wednesdays is a flip day - the team that works in week 1 would be off the following Wednesday, Week 2

All staff will be available for additional support as needed.

PERMITTEE NAME/ADDRESS (include Facility Name/Location if different)

Name HULL W P C F

Address 1111 NANTASKET AVE

HULL MA 02045

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT (DMR)

MA0101231	
PERMIT NUMBER	

001 A	
DISCHARGE NUMBER	

MAJOR
(SUBR E)
F- FINAL

TREATED SANITARY WASTEWATE

*** NO DISCHARGE ***

Facility HULL W P C F
Location HULL MA 02045
Attn: John Struzziery, Director of WW Ops

MONITORING PERIOD					
YEAR	MO	DAY	YEAR	MO	DAY
FROM 20	03	01	TO 20	03	31

NOTE: Read instructions before completing this form

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE	
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE				UNITS
BOD, 5-DAY (20 DEG. C)	SAMPLE MEASUREMENT	55	139	LBS/DY	3	5	5	mg/L	0	1/7	24
00310 1 0 0	PERMIT REQUIREMENT	768	MO AVG	LBS/DY	30	45	50	mg/L	0	WEEKLY	COMP 24
EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	1,656	WKLY AVG	LBS/DY	142	*****	*****	mg/L	0	1/7	24
BOD, 5-DAY (20 DEG. C)	PERMIT REQUIREMENT	REPORT MO AVG	*****	LBS/DY	REPORT MO AVG	*****	*****	mg/L	0	WEEKLY	COMP 24
00310 G 0 0	SAMPLE MEASUREMENT	*****	*****	****	6.80	*****	7.40	SU	0	01/01	GR
RAW SEW/INFLUENT	PERMIT REQUIREMENT	*****	*****	****	6.5	*****	8.5	SU	0	WEEKLY	GRAB
00400 1 0 0	SAMPLE MEASUREMENT	115	317	LBS/DY	7	11	11	mg/L	0	1/7	24
EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	768	1152	LBS/DY	30	45	50	mg/L	0	WEEKLY	COMP 24
00530 1 0 0	SAMPLE MEASUREMENT	3,776	*****	LBS/DY	359	*****	*****	mg/L	0	1/7	24
SOLIDS, TOTAL SUSPENDED	PERMIT REQUIREMENT	REPORT MO AVG	*****	LBS/DY	REPORT MO AVG	*****	*****	mg/L	0	WEEKLY	COMP 24
00530 G 0 0	SAMPLE MEASUREMENT	1.59	3.46	MGD	*****	*****	*****	****	0	99/99	RC
FLOW, IN CONDUIT OR THRU TREATMENT PLANT	PERMIT REQUIREMENT	3.04	DAILY MX	MGD	*****	*****	*****	****	0	CONTINUOUS	RC
50050 1 0 0	SAMPLE MEASUREMENT	*****	*****	****	1.42	*****	*****	MGD	0	99/99	RC
THRU TREATMENT PLANT	PERMIT REQUIREMENT	*****	*****	****	REQ MO AVG	*****	*****	MGD	0	CONTIN	RC
50050 0 0	PERMIT REQUIREMENT	*****	*****	****	*****	*****	*****	MGD	0	CONTIN	RC
See Comments	PERMIT REQUIREMENT	*****	*****	****	*****	*****	*****	MGD	0	CONTIN	RC
NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.										
Aram Varjabedian - Project Manager	Signature of Principal Executive Officer or Authorized Agent										
John Struzziery, Director of WW Ops	Signature of Principal Executive Officer or Authorized Agent										
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John Struzziery											

PERMITTEE NAME/ADDRESS (include Facility Name/location if different)
Name HULL W P C F
Address 1111 NANTASKET AVE
HULL MA 02045

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR) MAJOR
(SUB E)
F- FINAL
TREATED SANITARY WASTEWATER

OMB NO. 2040-0004

MA0101231
PERMIT NUMBER

001 A
DISCHARGE NUMBER

Facility HULL W P C F

Location HULL

MA 02045

Attn: John Struziery, Director of WW Ops

*** NO DISCHARGE ***

NOTE: Read instructions before completing this form

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE	
		VALUE	UNITS	VALUE	UNITS	VALUE					
Chlorine, Total Residual	*****	0.13	*****	0.85	mg/L	0	03/01	GR			
50060 1 0	PERMIT REQUIREMENT	*****	*****	0.7	MO AVG	*****	1	DAILY MAX	THREE PER DAY	GRAB	
ENTEROCOCCI	SAMPLE MEASUREMENT	*****	*****	21	*****	*****	380	CFU/100 ml	1	1/7	GR
61211 1 0	PERMIT REQUIREMENT	*****	*****	35	MO GEO	*****	276	CFU/100 ml	0	1/7	GRAB
COLIFORM, FECAL GENERAL	SAMPLE MEASUREMENT	*****	*****	10	*****	*****	10	#/100 ml	0	1/7	GR
74055 1 0 0	PERMIT REQUIREMENT	*****	*****	88	MO GEO	*****	260	#/100 ml	0	WEEKLY	GRAB
EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	*****	*****	98	*****	*****	*****	%	0	1/30	CA
BOD, 5-DAY PERCENT REMOVAL	PERMIT REQUIREMENT	*****	*****	85	MO AVG	*****	*****	PER-CEN T	0	ONCE/ MONTH	CALCTD
81010 K 0 0	SAMPLE MEASUREMENT	*****	*****	98	*****	*****	*****	%	0	1/30	CA
SOLIDS, SUSPENDED PERCENT REMOVA	PERMIT REQUIREMENT	*****	*****	85	MO AVG	*****	*****	PER-CEN T	0	ONCE/ MONTH	CALCTD
81011 K 0 0	SAMPLE MEASUREMENT	*****	*****	85	MO AVG	*****	*****	PER-CEN T	0	ONCE/ MONTH	CALCTD
PERCENTREMOVAL	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified persons properly gather and evaluate the information submitted. Based on my inquiry of the persons or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.										
Aram Varjabedian - Project Manager	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT										
John Struziery, Director of WW Ops	781 925-1207 20 04 15										
TYPED OR PRINTED	AREA CODE NUMBER YEAR MO DAY										

COMMENT AND EXPANATION OF ANY VIOLATIONS (Reference all attachments here)
REPORT MAXIMUM AND MINIMUM DAILY FLOW RATES AND TOTAL FLOW FOR EACH OPERATING DAY WITH DMR EACH MO
WET DATA ON DMR 001B

Date

Effluent

Data for dates in current month

Sunday Thru Saturday (avg placed on Saturday date)

Effluent TSS		
Week Start	Week End	Avg
03/01/20	03/07/20	4
03/08/20	03/14/20	5
03/15/20	03/21/20	8
03/22/20	03/28/20	11
MAX		11

Effluent BOD		
Week Start	Week End	Avg
03/01/20	03/07/20	3
03/08/20	03/14/20	3
03/15/20	03/21/20	3
03/22/20	03/28/20	5
MAX		5

Date	TSS mg/l	TSS Lbs	BOD mg/l	BOD LBS	Date	TSS mg/l	TSS LBS	BOD mg/l	BOD LBS
03/01/20					03/01/20				
03/02/20					03/02/20				
03/03/20	4	38	3	28	03/03/20				
03/04/20					03/04/20				
03/05/20					03/05/20				
03/06/20					03/06/20				
03/07/20					03/07/20	4	38	3	28
03/08/20					03/08/20				
03/09/20					03/09/20				
03/10/20	5	53	3	32	03/10/20				
03/11/20					03/11/20				
03/12/20					03/12/20				
03/13/20					03/13/20				
03/14/20					03/14/20	5	53	3	32
03/15/20					03/15/20				
03/16/20					03/16/20				
03/17/20	8	65	3	25	03/17/20				
03/18/20					03/18/20				
03/19/20					03/19/20				
03/20/20					03/20/20				
03/21/20					03/21/20	8	65	3	25
03/22/20					03/22/20				
03/23/20					03/23/20				
03/24/20	11	317	5	139	03/24/20				
03/25/20					03/25/20				
03/26/20					03/26/20				
03/27/20					03/27/20				
03/28/20					03/28/20	11	317	5	139
03/29/20					03/29/20				
03/30/20					03/30/20				
03/31/20	6	100	3	50	03/31/20				
MAX	11	317	5	139	MAX	11	317	5	139
AVG	7	115	3	55	AVG	7	118	4	56

Influent TSS		
Week Start	Week End	Avg
03/01/20	03/07/20	374
03/08/20	03/14/20	230
03/15/20	03/21/20	948
03/22/20	03/28/20	94
Max		948

Influent BOD		
Week Start	Week End	Avg
03/01/20	03/07/20	120
03/08/20	03/14/20	100
03/15/20	03/21/20	330
03/22/20	03/28/20	60
Max		330

TSS and BOD Loadings Check Sheet

Influent

Data for dates in current month

Sunday Thru Saturday (avg placed on Saturday date)

Date	TSS mg/l	TSS Lbs	BOD mg/l	BOD LBS	Date	TSS mg/l	TSS Lbs	BOD mg/l	BOD LBS
03/01/20					03/01/20				
03/02/20					03/02/20				
03/03/20	374	3.525	120	1.131	03/03/20				
03/04/20					03/04/20				
03/05/20					03/05/20				
03/06/20					03/06/20				
03/07/20					03/07/20	374.00		120.00	
03/08/20					03/08/20				
03/09/20					03/09/20				
03/10/20	230	2.436	100	1.059	03/10/20				
03/11/20					03/11/20				
03/12/20					03/12/20				
03/13/20					03/13/20				
03/14/20					03/14/20	230.00		100.00	
03/15/20					03/15/20				
03/16/20					03/16/20				
03/17/20	948	7.748	330	2.697	03/17/20				
03/18/20					03/18/20				
03/19/20					03/19/20				
03/20/20					03/20/20				
03/21/20					03/21/20	948.00		330.00	
03/22/20					03/22/20				
03/23/20					03/23/20				
03/24/20	94	2.713	60	1.731	03/24/20				
03/25/20					03/25/20				
03/26/20					03/26/20				
03/27/20					03/27/20				
03/28/20					03/28/20	94.00		60.00	
03/29/20					03/29/20				
03/30/20					03/30/20				
03/31/20	148	2.456	100	1.660	03/31/20				
MAX	948	7.748	330	2.697	MAX	948		330	
AVG	359	3.776	142	1.656	AVG	412		153	

Date	Manual Screen Used	Mechanical Screen	GRIT CHAMBER	GRIT CLASSIFIER	PRI CLAR		AT #1		AT #2		AT #3		AT #4		SEC CLAR #1	SEC CLAR #2	CL2 BASIN #1	CL2 BASIN #2	GRAVITY THICK #1
	Yes/No	ON/OFF	ON/OFF	ON/OFF	ON/OFF	ON/OFF	ON/OFF	ON/OFF	ON/OFF	ON/OFF	ON/OFF	ON/OFF	ON/OFF	ON/OFF	ON/OFF	ON/OFF	ON/OFF	ON/OFF	ON/OFF
Sun 01	No	On	On	Yes	Off	On	On	Off	Off	On	On	Off	Off	On	On	On	On	On	On
Mon 02	No	On	On	Yes	Off	On	On	Off	Off	On	On	Off	Off	On	On	On	On	On	On
Tue 03	No	On	On	Yes	Off	On	On	Off	Off	On	On	Off	Off	On	On	On	On	On	On
Wed 04	No	On	On	Yes	Off	On	On	Off	Off	On	On	Off	Off	On	On	On	On	On	On
Thu 05	No	On	On	Yes	Off	On	On	Off	Off	On	On	Off	Off	On	On	On	On	On	On
Fri 06	No	On	On	Yes	Off	On	On	Off	Off	On	On	Off	Off	On	On	On	On	On	On
Sat 07	No	On	On	Yes	Off	On	On	Off	Off	On	On	Off	Off	On	On	On	On	On	On
Sun 08	No	On	On	Yes	Off	On	On	Off	Off	On	On	Off	Off	On	On	On	On	On	On
Mon 09	No	On	On	Yes	Off	On	On	Off	Off	On	On	Off	Off	On	On	On	On	On	On
Tue 10	No	On	On	Yes	Off	On	On	Off	Off	On	On	Off	Off	On	On	On	On	On	On
Wed 11	No	On	On	Yes	Off	On	On	Off	Off	On	On	Off	Off	On	On	On	On	On	On
Thu 12	No	On	On	Yes	Off	On	On	Off	Off	On	On	Off	Off	On	On	On	On	On	On
Fri 13	No	On	On	Yes	Off	On	On	Off	Off	On	On	Off	Off	On	On	On	On	On	On
Sat 14	No	On	On	Yes	Off	On	On	Off	Off	On	On	Off	Off	On	On	On	On	On	On
Sun 15	No	On	On	Yes	Off	On	On	Off	Off	On	On	Off	Off	On	On	On	On	On	On
Mon 16	No	On	On	Yes	Off	On	On	Off	Off	On	On	Off	Off	On	On	On	On	On	On
Tue 17	No	On	On	Yes	Off	On	On	Off	Off	On	On	Off	Off	On	On	On	On	On	On
Wed 18	No	On	On	Yes	Off	On	On	Off	Off	On	On	Off	Off	On	On	On	On	On	On
Thu 19	No	On	On	Yes	Off	On	On	Off	Off	On	On	Off	Off	On	On	On	On	On	On
Fri 20	No	On	On	Yes	Off	On	On	Off	Off	On	On	Off	Off	On	On	On	On	On	On
Sat 21	No	On	On	Yes	Off	On	On	Off	Off	On	On	Off	Off	On	On	On	On	On	On
Sun 22	No	On	On	Yes	Off	On	On	Off	Off	On	On	Off	Off	On	On	On	On	On	On
Mon 23	No	On	On	Yes	Off	On	On	Off	Off	On	On	Off	Off	On	On	On	On	On	On
Tue 24	No	On	On	Yes	Off	On	On	Off	Off	On	On	Off	Off	On	On	On	On	On	On
Wed 25	No	On	On	Yes	Off	On	On	Off	Off	On	On	Off	Off	On	On	On	On	On	On
Thu 26	No	On	On	Yes	Off	On	On	Off	Off	On	On	Off	Off	On	On	On	On	On	On
Fri 27	No	On	On	Yes	Off	On	On	Off	Off	On	On	Off	Off	On	On	On	On	On	On
Sat 28	No	On	On	Yes	Off	On	On	Off	Off	On	On	Off	Off	On	On	On	On	On	On
Sun 29	No	On	On	Yes	Off	On	On	Off	Off	On	On	Off	Off	On	On	On	On	On	On
Mon 30	No	On	On	Yes	Off	On	On	Off	Off	On	On	Off	Off	On	On	On	On	On	On
Tue 31	No	On	On	Yes	Off	On	On	Off	Off	On	On	Off	Off	On	On	On	On	On	On
MIN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MAX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AVG	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SUM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Hull Wastewater Treatment Plant Operations Data

March, 2020
Pg 2

Date	GRAVITY THICK #2	SLUDGE TANK #1	SLUDGE TANK #2	RST	Rainfall Inches	MIN AIR TEMP Deg F	MAX AIR TEMP Deg F	GRT REMOVED LBS	SCREENINGS CU FT	INF TSS (Report) MGL	INF BOD (Report) MGL	INF FLOW MGD	INFLUENT O MINIMUM MGD	INFLUENT O MAXIMUM MGD	PRI TSS MGL
Sun 01	ON/OFF	ON/OFF	ON/OFF	ON/OFF	0.00	20	34	35	0.7			1.32	0.00	2.12	
Mon 02	OFF	OFF	OFF	OFF	0.01	26	51	50	0.7			1.30	0.73	2.46	
Tue 03	OFF	OFF	OFF	OFF	0.07	47	58	40	0.7	374	120	1.27	0.75	1.65	
Wed 04	OFF	OFF	OFF	OFF	0.03	42	49	40	0.7			1.32	0.82	2.14	
Thu 05	OFF	OFF	OFF	OFF	0.00	37	50	35	0.7			1.29	0.83	1.68	
Fri 06	OFF	OFF	OFF	OFF	0.03	33	44	40	0.7			1.33	0.60	1.72	
Sat 07	OFF	OFF	OFF	OFF	0.04	30	43	45	0.7			1.73	0.62	3.22	
Sun 08	OFF	OFF	OFF	OFF	0.00	31	52	30	0.7			1.59	0.83	2.78	
Mon 09	OFF	OFF	OFF	OFF	0.00	42	66	30	0.7			1.38	0.18	2.68	
Tue 10	OFF	OFF	OFF	OFF	0.02	40	64	35	0.7	230	100	1.44	0.63	2.91	
Wed 11	OFF	OFF	OFF	OFF	0.00	41	57	35	0.7			1.45	0.19	3.18	
Thu 12	OFF	OFF	OFF	OFF	0.00	36	43	40	0.7			1.45	0.92	2.48	
Fri 13	OFF	OFF	OFF	OFF	0.23	41	56	35	0.7			1.49	0.93	2.98	
Sat 14	OFF	OFF	OFF	OFF	0.00	40	51	30	0.7			1.35	1.01	2.84	
Sun 15	OFF	OFF	OFF	OFF	0.00	37	52	30	0.7			1.21	0.29	2.54	
Mon 16	OFF	OFF	OFF	OFF	0.00	28	35	40	0.7			1.14	0.59	1.87	
Tue 17	OFF	OFF	OFF	OFF	0.08	31	44	30	0.7	948	330	1.08	0.59	1.58	
Wed 18	OFF	OFF	OFF	OFF	0.00	38	49	40	0.7			1.04	0.00	2.86	
Thu 19	OFF	OFF	OFF	OFF	0.48	40	42	35	0.7			1.18	0.34	2.95	
Fri 20	OFF	OFF	OFF	OFF	0.12	39	65	25	0.7			1.23	0.00	3.18	
Sat 21	OFF	OFF	OFF	OFF	0.01	35	59	25	0.7			1.18	0.64	1.66	
Sun 22	OFF	OFF	OFF	OFF	0.00	21	33	30	0.7			1.14	0.53	1.64	
Mon 23	OFF	OFF	OFF	OFF	2.20	29	42	40	0.7			1.33	0.34	3.59	
Tue 24	OFF	OFF	OFF	OFF	0.61	36	47	300	0.7	94	60	3.49	0.65	4.99	
Wed 25	OFF	OFF	OFF	OFF	0.00	38	48	200	0.7			2.34	0.61	2.76	
Thu 26	OFF	OFF	OFF	OFF	0.00	38	48	40	0.7			2.03	0.63	2.52	
Fri 27	OFF	OFF	OFF	OFF	0.01	41	57	50	0.7			2.20	1.66	2.54	
Sat 28	OFF	OFF	OFF	OFF	0.21	39	51	30	0.7			1.88	1.27	2.33	
Sun 29	OFF	OFF	OFF	OFF	0.46	40	43	80	0.7			2.00	1.37	2.61	
Mon 30	OFF	OFF	OFF	OFF	0.15	38	41	50	0.7			2.37	1.86	2.93	
Tue 31	OFF	OFF	OFF	OFF	0.04	35	40	50	0.70	148	100	2.37	1.86	2.77	
MIN	-	-	-	-	0.00	20	33	25	1	94	60	1.04	0.00		
MAX	-	-	-	-	2.20	47	66	300	1	948	330	3.49		4.99	
AVG	-	-	-	-	0.15	36	49	52	1	359	142	1.58			
SUM	-	-	-	-	4.80	-	-	1,615	22			-	-	-	-

[illegible]

Date	EFF ROD (Report)	EFF FECAL #/100	EFF MAX DAILY FLOW MGD	EFF MIN DAILY FLOW MGD	EFF FLOW MGD	EFF #1PH	CL2 RES #1	CL2 RES #2	CL2 RES #3	CL2 RES Daily Avg	THICKENE D SLUDGE TS	THICKENER #1 BLANKET	THICKENER #2 BLANKET	LEACHATE TSS	LEACHATE BOD	LEACHAT E COD
	MGL	ML	MGD	MGD	MGD	SU	MGL	MGL	MGL	MGL	%	FT	FT	MGL	MGL	MGL
Sun 01			1.96	0.76	1.30	6.80	0.04	0.33	0.06	0.14	4.9	7.0				
Mon 02			1.94	0.77	1.16	7.30	0.00	0.01	0.01	0.01	4.9	5.5				
Tue 03	3.0		1.71	0.76	1.13	7.20	0.00	0.00	0.00	0.00	4.7	5.5				
Wed 04		10	1.81	0.78	1.13	7.30	0.00	0.27	0.46	0.24		7.5				
Thu 05			1.63	0.77	1.01	7.20	0.00	0.00	0.01	0.00	4.9	7.0				
Fri 06			1.77	0.77	1.05	7.40	0.36	0.00	0.01	0.12	4.3	7.5				
Sat 07			4.02	0.74	1.54	7.40	0.01	0.00	0.27	0.09		7.5				
Sun 08			3.46	0.01	1.38	7.10	0.00	0.06	0.07	0.04		8.0				
Mon 09			1.99	0.01	1.20	7.40	0.01	0.00	0.01	0.01	4.4	7.0				
Tue 10	3.0		4.12	0.72	1.27	7.30	0.00	0.00	0.01	0.00	6.2	7.0				
Wed 11		10	3.80	0.73	1.30	6.90	0.00	0.01	0.00	0.00		7.5				
Thu 12			3.84	0.81	1.30	6.90	0.00	0.51	0.03	0.18	6.2	6.5				
Fri 13			2.05	0.82	1.38	6.90	0.03	0.00	0.01	0.01	5.6	6.0				
Sat 14			2.91	0.00	1.21	6.90	0.00	0.04	0.01	0.02		6.5				
Sun 15			2.04	0.68	1.08	7.10	0.02	0.06	0.01	0.03		8.0				
Mon 16			1.95	0.00	1.03	6.90	0.01	0.10	0.02	0.04	6.3	7.0				
Tue 17	3.0	10	1.69	0.00	0.98	6.90	0.03	0.10	0.00	0.04		7.5				
Wed 18			1.84	0.00	0.96	6.80	0.01	0.00	0.02	0.01	5.0	7.5				
Thu 19			4.03	0.00	1.12	7.10	0.01	0.00	0.11	0.04	5.2	7.5				
Fri 20			1.83	0.00	1.08	6.90	0.00	0.00	0.00	0.00	4.4	7.5				
Sat 21			1.79	0.00	1.04	7.00	0.00	0.00	0.86	0.29		8.0				
Sun 22			1.86	0.00	1.01	7.00	0.00	0.07	0.02	0.03		8.3				
Mon 23		10	4.39	0.00	1.29	6.80	0.03	0.01	0.03	0.02	4.1	8.0				
Tue 24	4.8		5.56	2.08	3.46	7.10	1.05	0.68	0.83	0.85	4.3	7.5				
Wed 25			4.28	1.22	2.34	7.00	0.08	0.05	0.61	0.25	4.7	7.5				
Thu 26			4.03	1.29	2.03	7.00	0.43	0.05	0.31	0.26		7.0				
Fri 27			2.44	1.26	1.87	6.80	0.00	0.00	0.09	0.03	4.9	11.0				
Sat 28			2.24	1.10	1.60	7.10	0.00	0.00	0.02	0.01	3.7	8.0				
Sun 29			2.32	1.11	1.72	7.00	0.00	0.03	0.28	0.10		8.5				
Mon 30			3.96	1.31	2.09	7.00	1.03	0.48	0.66	0.72	4.7	8.5				
Tue 31	3.0	10	3.96	1.15	1.99	7.00	0.76	0.71	0.01	0.49		9.0				
MIN	3.0	10		0.00		6.80	0.00	0.00	0.00	0.00	3.71	5.50	-	-	-	-
MAX	4.8	10	5.56			7.40	1.05	0.71	0.86	0.85	6.34	11.00	-	-	-	-
AVG	3.4	10				7.05	0.13	0.12	0.16	0.13	4.92	7.49	-	-	-	-
SUM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Date	LEACHATE	Groundwater Underdrain	Potable H2O Calc.	Thickened Feed Sludge Gallons to truck	THICKENED SLDG LBS/DAY	Sludge Holding Tank Level	Thickened Sludge Holding Tank Level	EFF TEMP DEG C	Enterococci No/100ml	Toxicity %	GALLS HEATING OIL Inches	NaOCl Gallons	NaOH Gallons	Hingham Flow MGD
Sun 01	GAL	GAL	GAL	GAL	LBS/DAY	FT	FT	9.8	No/100ml	%	2.292	27	2.0	
Mon 02			59	0		0.0	0.3	10.3			2.292	37	1.0	
Tue 03			31	9,000	3,664	0.0	0.3	12.0			2.292	23	1.0	
Wed 04			49	9,000	3,552	0.0	0.3	11.6	10		2.292	25	0.0	
Thu 05			137	0		0.0	0.3	11.1			2.292	32	2.0	
Fri 06			81	9,000	3,693	0.0	3.0	11.3			2.292	31	1.0	
Sat 07			96	8,500	3,016	0.0	0.3	9.3			2.292	34	1.0	
Sun 08			91	0		0.0	0.3	9.6			2.292	36	2.0	
Mon 09			77	0		0.0	0.3	11.6			2.292	26	1.0	
Tue 10			94	9,000	3,307	0.0	0.2	12.3			2.292	27	1.0	
Wed 11			198	9,000	4,640	0.0	0.3	12.2	10		2.292	34	2.0	
Thu 12			127	0		0.0	0.3	11.2			2.292	45	2.0	
Fri 13			150	9,000	4,633	0.0	0.3	11.6			2.292	37	0.0	
Sat 14			116	9,000	4,206	0.0	0.3	10.6			2.292	41	4.0	
Sun 15			66	0		0.0	0.3	10.4			2.292	51	2.0	
Mon 16			55	0		0.0	0.3	9.7			2.292	25	2.0	
Tue 17			34	9,000	4,763	0.0	0.3	10.6	10		2.287	23	1.0	
Wed 18			74	0		0.0	0.3	12.0			2.287	41	1.0	
Thu 19			1,717	8,500	3,544	0.0	0.2	11.9			2.287	22	1.0	
Fri 20			4,977	9,000	3,883	0.0	0.3	12.2			2.287	22	1.0	
Sat 21			6,226	9,000	3,329	0.0	0.0	11.5			2.287	34	0.0	
Sun 22			277	0		0.0	0.3	10.3			2.287	34	4.0	
Mon 23			41	0		0.0	0.3	10.4	390		2.287	46	1.0	
Tue 24			136	9,000	3,077	0.0	0.3	11.0			2.046	57	1.0	
Wed 25			28	9,000	3,250	0.0	0.3	10.8			2.046	59	2.0	
Thu 26			61	9,000	3,497	0.0	0.3	11.0			2.046	41	2.0	
Fri 27			84	0		0.0	0.0	12.1			2.046	54	2.0	
Sat 28			62	9,000	3,666	0.0	0.0	12.0			2.046	33	1.0	
Sun 29			65	9,000	2,785	0.0	0.3	12.1			2.046	34	1.0	
Mon 30			19	0		0.0	0.3	11.5			2.046	68	2.0	
Tue 31			10	9,000	3,506	0.0	0.3	10.8	10		2.039	51	1.0	
			43	0		0.0	0.3	9	10	-	2.046	22	0.0	
MIN	-	-	10	0	2,785	0	0	12	390	-	2.292	68	4.0	
MAX	-	-	6,226	9,000	4,763	0	3	11	86	-	2.227	37	1.5	
AVG	-	-	493	5,194	3,667	0	0							
SUM	-	-	15,280	161,000	66,011	-	-					-	-	



Hull WWTF
Monthly Rain, Temperature and Flow
March, 2020

Date	Rainfall	Minimum Air Temp	Maximum Air Temp	Effluent Flow
	Inches	F	F	MGD
03/01/20	0.00	20	34	1.300
03/02/20	0.01	26	51	1.160
03/03/20	0.07	47	58	1.130
03/04/20	0.03	42	49	1.130
03/05/20	0.00	37	50	1.010
03/06/20	0.03	33	44	1.050
03/07/20	0.04	30	43	1.540
03/08/20	0.00	31	52	1.380
03/09/20	0.00	42	66	1.200
03/10/20	0.02	40	64	1.270
03/11/20	0.00	41	57	1.300
03/12/20	0.00	36	43	1.300
03/13/20	0.23	41	56	1.380
03/14/20	0.00	40	51	1.210
03/15/20	0.00	37	52	1.080
03/16/20	0.00	28	35	1.030
03/17/20	0.08	31	44	0.980
03/18/20	0.00	38	49	0.960
03/19/20	0.48	40	42	1.120
03/20/20	0.12	39	65	1.080
03/21/20	0.01	35	59	1.040
03/22/20	0.00	21	33	1.010
03/23/20	2.20	29	42	1.290
03/24/20	0.61	36	47	3.460
03/25/20	0.00	38	48	2.340
03/26/20	0.00	38	48	2.030
03/27/20	0.01	41	57	1.870
03/28/20	0.21	39	51	1.600
03/29/20	0.46	40	43	1.720
03/30/20	0.15	38	41	2.090
03/31/20	0.04	35	40	1.990
Min	0.00	20	33	0.96
Max	2.20	47	66	3.46
Avg	0.15	36	49	1.42
Sum	4.80			44.05



Woodard and Curran
February, 2020
In Plant Sulfide Readings



Date	Wind Direction	Outside Temp	Outside Condition	Front Door	Head Works	Primary Tank No. 1	Primary Tank No. 2	Gravity Thickener	Aeration Tanks	Rotary Sludge Thickener Room	Scrubber In	Roof Exhaust Scrubber Out	% Removal
	Direction	Deg F	Condition	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
Sat 01	SSW-2	32	Cloudy		0.100								
Sun 02	NNW-7	35	Cloudy										
Mon 03	W-10	35	Partly cloudy										
Tue 04	ENE-4	35	Partly cloudy										
Wed 05	NNW-5	36	Snowy/rainy										
Thu 06	ESE-14	36	Rain										
Fri 07	ENE-7	37	Cloudy										
Sat 08	W-17	25	Clear										
Sun 09	N-3	22	Clear		0.130								
Mon 10	SW-15	40	Light rain		0.100								
Tue 11	NNE 3	39	Light rain										
Wed 12	WNW-13	36	Fair										
Thu 13	ESE-5	34	Light Rain										
Fri 14	NNW-12	32	Partly cloudy										
Sat 15	NW-5	11	Sunny										
Sun 16	SW-10	31	Partly cloudy		0.100								
Mon 17	WNW-9	34	Sunny		0.130								
Tue 18	ESE-13	34	Partly cloudy										
Wed 19	WNW-11	39	Cloudy										
Thu 20	WNW-7	23	Sunny										
Fri 21	NNW-12	16	Sunny										
Sat 22	SW-11	27	Sunny										
Sun 23	SW-6	32	Sunny		0.100								
Mon 24	SSW-6	37	Sunny										
Tue 25	SW-3	44	Cloudy										
Wed 26	NE-7	41	Light rain/ cloud										
Thu 27													
Fri 28	WNW-16	29	Sunny										
Sat 29	W-7	30	Fair										
Min.		11			0.100								
Max.		44			0.130								
Ave.		32			0.110								
Target				<.01	<.10.0	<.10.0	<.10.0	<.10.0	.050	.050	<.10.0	<.1.0	95%



Woodard and Curran
February, 2020



Outside Plant Sulfide Readings

[illegible]